STAFF REPORT

LOCALIZED HEALTH IMPACTS REPORT

For Selected Projects Awarded Funding Through the Alternative and Renewable Fuel and Vehicle Technology Program Under Solicitation PON-13-609 – Pilot-Scale and Commercial-Scale Advanced Biofuels Production Facilities

CALIFORNIA
ENERGY COMMISSION

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Aida Escala and
Patrick Brecht
Primary Authors

Elizabeth John
Project Manager

John P. Butler II
Office Manager
EMERGING FUELS AND TECHNOLOGIES OFFICE

Randy Roesser
Deputy Director
FUELS AND TRANSPORTATION DIVISION

Robert P. Oglesby
Executive Director

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These staff members from the California Energy Commission have contributed to this document.

Bill Kinney
Jean Baronas

PREFACE

The increased use of alternative and renewable fuels supports California's commitment to curb greenhouse gas emissions (GHG), reduce petroleum use, improve air quality, and stimulate the sustainable production and use of alternative fuels within California. Alternative and renewable transportation fuels include electricity, natural gas, biomethane, propane, hydrogen, ethanol, renewable diesel, and biodiesel. State investment is needed to fill the gap and fund the differential cost of these emerging fuels and vehicle technologies.

Assembly Bill 118 (Núñez, Chapter 750, Statutes of 2007) created the Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP). This statute, amended by Assembly Bill 109 (Núñez, Chapter 313, Statutes of 2008), authorizes the California Energy Commission to "develop and deploy innovative technologies that transform California's fuel and vehicle types to help attain the state's climate change policies." Assembly Bill 8 (Perea, Chapter 401, Statutes of 2013) reauthorizes the ARFVTP through January 1, 2024.

The statute also directs the California Air Resources Board (ARB) to develop guidelines to ensure air quality improvements. The ARB Air Quality Improvement Program (AQIP) Guidelines, approved in 2008, are published in the *California Code of Regulations, Title 13, Motor Vehicles, Chapter 8.1, AB 118 Air Quality Guidelines for the Alternative and Renewable Fuel and Vehicle Technology Program and the AQIP*. The *AQIP Guidelines* require the Energy Commission, as the funding agency, to analyze the localized health impacts of ARFVTP-funded projects that require a permit (13 CCR § 2343).

ABSTRACT

This *Localized Health Impacts Report* reviews the project proposals under consideration for funding that were submitted in response to the Pilot-Scale and Commercial-Scale Advanced Biofuels Production Facilities PON-13-609 by the Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP). This *Localized Health Impacts Report* contains project and site descriptions (including geographic locations), and potential impacts as contained in the proposals.

This *Localized Health Impacts Report* analyzes the aggregated locations of projects, the impacts in communities with the most significant exposure to air contaminants or localized air contaminants, or both, including but not limited to, communities of minority populations or low-income populations, as declared by the project proposers or also as determined by California Energy Commission staff. This report identifies outreach to community groups and other affected stakeholders, also as declared by the project proposers.

Keywords: air pollution, air quality, air quality improvement program (AQIP), Air Resources Board (ARB), alternative fuel, Assembly Bill (AB) 118, assessment, biodiesel, California Environmental Quality Act, criteria emissions, demographic, Energy Commission, environmental justice, Environmental Justice Screening Method (EJSM), environmental justice (EJ), greenhouse gas emissions (GHG), localized health impact (LHI)

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CHAPTER 1:
Projects Proposed for Funding

This chapter summarizes the projects proposed for Energy Commission Funding. The project in this *LHI Report* is:

Pilot-Scale and Commercial-Scale Advanced Biofuels Production Facilities

- Crimson Renewable Energy, LP − 17731 Millux Road, Bakersfield, CA 93311

CHAPTER 2:
Approach, Definitions, and Project Proposed for Funding

The California Energy Commission, through the Alternative and Renewable Fuels and Vehicle Technology Program (ARFVTP), released a competitive grant solicitation and application package on January 14, 2014. The application due date was March 25, 2014. Grant solicitation PON-13-609 sought to fund projects that develop new or modify existing California-based biofuel production facilities that can sustainably produce at least 50,000 diesel gallon equivalents per year for liquid fuels, or 10,000 diesel gallon equivalents per year for biomethane.

An *LHI Report* was prepared for Phase I of this project in November 2013 (CEC-600-2013-004). This new proposed project will involve expansion onto ⅓- to ⅔-acre of land adjacent to the existing commercial facility to produce low carbon-intensity biodiesel. During normal operations, no criteria emissions, particulate matter (PM), or air toxics at any appreciable level will be generated.[1] The biofuels facilities stand to increase traffic nominally for inbound deliveries of feedstock and raw materials and outbound deliveries of biodiesel and crude glycerin by truck and rail, but this is not expected to expand truck and rail traffic significantly.

The Energy Commission is required to analyze and publish this *LHI Report* for public review and comment for a period of 30 days. Based on the Energy Commission's interpretation of the Air Quality Improvement Program (AQIP) Guidelines, this *LHI Report* provides information about the communities surrounding the potential project sites and assesses the potential impacts to public health in those communities as a result of the project. This report is prepared under the *California ARB AQIP Guidelines, California Code of Regulations, Title 13, Motor Vehicles, Chapter 8.1 (CCR § 2343)*:

> "(6) Localized health impacts must be considered when selecting projects for funding. The funding agency must consider environmental justice consistent with state law and complete the following:
>
> > (A) For each fiscal year, the funding agency must publish a staff report for review and comment by the public at least 30 calendar days prior to approval of projects. The report must analyze the aggregate locations of the funded projects, analyze the impacts in communities with the most significant exposure to air contaminants or localized air contaminants, or both, including, but not limited to, communities of minority populations or low-income populations, and identify agency outreach to community groups and other affected stakeholders.

1 "Particulate matter" is unburned fuel particles that form smoke or soot and stick to lung tissue when inhaled.

(B) Projects must be selected and approved for funding in a publicly noticed meeting."

This *LHI Report* is not intended to be a detailed environmental health or impact analysis of projects potentially to be funded by the program nor is this assessment intended to be a substitute for the comprehensive environmental review conducted by regulatory agencies during the California Environmental Quality Act (CEQA) process. The application of CEQA would provide a more detailed analysis of the potential for adverse environmental effects of the proposed projects.

This report collects available information about the potential air quality impacts of the proposed projects and provides a collective, narrative analysis of the potential for localized health effects from those projects. The AQIP Guidelines mandate that the Energy Commission track the progress of the projects through the CEQA process and ensure a commitment exists from the proposers to complete all mitigation measures required by the permitting agency before they receive the first funding allocation.

Staff reviewed results from the Environmental Justice Screening Method (EJSM) to identify projects located in areas with social vulnerability indicators and the greatest exposure to air pollution and associated health risks.[2] The EJSM was developed to identify low-income communities highly affected by air pollution for assessing the impacts of climate change regulations, specifically Assembly Bill 32 (Núñez, Chapter 488, Statutes of 2006), the California Global Warming Solutions Act of 2006.

The EJSM identifies the various levels of risk in regions throughout California, and high-risk communities are considered especially vulnerable to even the smallest impacts. The EJSM integrates data on exposure to air pollution, cancer risk, ozone concentration and frequency of high ozone days, race/ethnicity, poverty level, home ownership, median household value, educational attainment, and sensitive populations (populations under 5 years of age, or over 65 years of age).

The ARB applied the method to the San Francisco Bay Area, San Joaquin Valley, and California's desert region. However, the results consider only income among the list of social vulnerability indicators. For communities not yet assessed in the EJSM, the Energy Commission identifies high-risk areas as those in nonattainment basins for ozone, particle pollution, or particulate matter (PM) 2.5 and PM 10, along with populations that have high poverty and minority rates as well as a high percentage of sensitive populations.

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2 California Air Resources Board (ARB), *Air Pollution and Environmental Justice, Integrating Indicators of Cumulative Impact and Socio-Economic Vulnerability Into Regulatory Decision-Making, 2010.* (Sacramento, California) Contract authors: Manuel Pastor Jr., Ph.D., Rachel Morello-Frosch, Ph.D., and James Sadd, Ph.D.

This *LHI Report* contains detailed assessments for all projects proposed for funding. This is most important for those located in low-income communities that are highly impacted by air pollution.

Permits

For this assessment, the Energy Commission interprets "permits" to connote discretionary and conditional use permits because they require a review of potential impacts to a community and the environment before issuance. For air permits, local air districts conduct a New Source Review (NSR) to determine the emission impacts. Since ministerial-level permits, such as building permits, do not assess public health-related pollutants, the Energy Commission staff does not assess projects requiring only ministerial level permits in this report.

Demographic Data

Staff collected information on ethnicity, age, and income for the city/community where the potential project, if funded, would be located. The information identifies those communities with higher minority populations, lower incomes, and highly sensitive groups based on age. For this assessment, staff identifies sensitive populations as individuals younger than 5 years of age and older than 65 years of age. The demographic data for the proposed project site are provided.

Emissions

Staff collected information about predicted emissions from the project proposals. The emissions considered for this assessment include those from developing pilot-scale and commercial-scale advanced biofuel production facilities.

Community Status of Proposed Projects

The following community status descriptions for the proposed projects are based on the ARB *Proposed Screening Method,* which integrates data to identify low-income communities that are highly impacted by air pollution.[3] The *California Infrastructure State Implementation Plans* (http://www.arb.ca.gov/planning/sip/sip.htm) are used as a source for public notices for attainment plans. The *Green Book Nonattainment Areas for Criteria Pollutants* (http://www.epa.gov/oaqps001/greenbk) is also used as an information source for this assessment.

3 California Air Resources Board (ARB), *Proposed Screening Method for Low-Income Communities Highly Impacted by Air Pollution, 2010* (Sacramento, California).

Crimson Renewable Energy, LP

Project Name

Bakersfield Biodiesel & Glycerin Production Plant Expansion Project

Crimson Renewable Energy LP (Crimson) proposes to expand its Bakersfield Biodiesel & Glycerin Production Plant onto ⅓- to ⅔-acre of land adjacent to its existing commercial facility, located at 17731 Millux Road, Bakersfield, California, 93311. The existing facility is situated in a 60-acre petrochemical terminal facility owned and operated by an affiliated company, Delta Trading LP. The immediate area is zoned for industrial use, and the proposed project will have no impact on nearby agricultural land. There are no homes, day care facilities, elder care facilities, medical facilities, or schools within 3 miles of the existing facility and proposed project.

The project is not located near any sensitive receptors; thus exposure to substantial pollutant concentrations is unlikely. Tanks and processes are closed, and those involving liquids with volatile compounds are also under vapor control, which also serves as odor control. The proposed expansion of the existing commercial facility will result in a small total increase in criteria and toxic air emissions directly associated with project operations. Yet, a net benefit is realized from less petroleum use and more alternative fuel use as a result of this project.

The existing Crimson commercial plant is surrounded on different sides by a variety of industrial equipment, rail lines, and empty land. This facility has rail access with 57 rail loading/unloading spots and convenient access to the Interstate 5 freeway (about 2½ miles southwest of the closest exit on the I-5 freeway). Facility ingress and egress are from Millux Road, which is a paved road that experiences regular truck traffic and light traffic volumes. The anticipated addition of 7-12 trucks per day to the road is not expected to have significant impact.

Outreach Efforts

Throughout the duration of the project, Crimson will undertake a variety of outreach efforts to educate the surrounding community of the environmental benefits and/or impacts of the project. In general, Crimson will target the following stakeholders with its outreach:

- Refiners
- Terminal operators
- Fuel marketers/jobbers
- State, municipal, and regional governmental agencies (including school boards)
- Fleets
- Truck stop operators
- Policy makers
- Large agricultural companies

Outreach will typically take the form of in-person meetings or group presentations in which Crimson will provide the following types of information:

- Background on Crimson Renewable Energy, LP
- State production and industry data
- Product specifications and performance details
- Low Carbon Fuel Standard (LCFS) information
- The impact of biodiesel on carbon and climate change targets

Crimson already conducts outreach meetings regularly and will continue to do so throughout the duration of the proposed project. Crimson typically meets with its customers quarterly and with their customers (end users) annually.

CHAPTER 3:
Location Analysis and Community Impacts

Based on the staff's assessment of the proposed project, it is expected that the surrounding community has a population that is presumed to be most susceptible to health risks because of their exposure to criteria and toxic air pollutants on a more continual basis as compared with other geographic regions. For this *LHI Report*, environmental justice (EJ) indicators are evaluated as follows.

- A ***minority EJ*** is indicated if a minority subset represents more than 30 percent of a given city's population.

- A ***poverty level EJ*** is indicated if a city's poverty level exceeds California's poverty level (for the entire state – 15.3 percent).

- An ***unemployment EJ*** is indicated if a given city's unemployment rate exceeds California's unemployment rate (for the entire state – 8.1 percent as of March 2014).

- An EJ indicator is also noted for cities where the ***percentage of persons younger than 5 years of age or older than 65 years of age*** is 20 percent higher than the average of the percentage of persons under 5 years of age or over 65 years of age for the entire state. (For the entire state, the percentage of persons under the age of 5 years is 6.8 percent, and the percentage of persons over the age of 65 years is 11.4 percent.)

The proposed project site has minority, poverty, and unemployment EJ indicators. The age EJ indicator does not exist in the proposed site. The proposed project is expected to have a net benefit by reducing emissions and leading to improved air quality. While overall air quality depends on a number of factors, the Energy Commission expects that air quality will improve over time where the site is proposed. Table 1 of this *LHI Report* covers the city with EJ indicators, which are described as minority EJ, poverty level EJ, unemployment EJ, and age EJs.

Staff identifies high-risk communities using the following factors: (1) those located in nonattainment air basins for ozone, PM 10 and PM 2.5; (2) those with high-poverty, minority population, and/or unemployment rates; and (3) those with a high percentage of sensitive populations (under 5 years of age and over 65 years of age). Those designated as high-risk communities would be located in nonattainment air basins and have one or more of the other two factors. The proposed project site would be in a nonattainment zone for PM 2.5. This project, according to the EJSM, would be located in a high-risk community.

CHAPTER 4:
Summary

If funded, the proposed project would result in one site for commercial-scale advanced biofuel production. Table 1 indicates the city and EJ indicators in which the site is proposed to be located. More demographics for the community are contained in Appendix A. Appendix A contains information on persons below the poverty level, black persons, American Indian and Alaska Native, persons of Hispanic or Latino origin, white persons and persons under 5 years of age and over 65 years of age. The unemployment rate for the community is also given in Appendix A.

Based on the review of the proposed project in this localized health impacts report, the site will increase the widespread use of alternative fuel vehicles. As more alternative fuel vehicles enter the market and begin to displace gasoline and diesel vehicles, tailpipe pollutants will decrease significantly. The facility stands to increase traffic nominally for inbound deliveries of feedstock and raw materials and outbound deliveries of biodiesel and crude glycerin by truck and rail. Yet, a net benefit is realized from less petroleum use and more alternative fuel use as a result of this project. The anticipated impacts to the city where this project would be located are positive in terms of cleaner air and anticipated GHG reductions.

Table 1: City With EJ Indicators

	Minority	**Poverty Level**	**Unemployment Rate**	**Proposals**
Bakersfield	x	x	x	1

Source: Energy Commission staff analysis

CHAPTER 5:
Acronyms

AQIP	Air Quality Improvement Program
ARB	Air Resources Board
ARFVTP	Alternative and Renewable Fuel and Vehicle Technology Program
CCR	California Code of Regulations
Energy Commission	California Energy Commission
CEQA	California Environmental Quality Act
EJ	Environmental justice
EJSM	Environmental justice screening method
GHG	Greenhouse gas
LHI	Localized health impact
LCFS	Low Carbon Fuel Standard
NOx	Oxides of nitrogen
PM	Particulate matter
PON	Program Opportunity Notice

APPENDIX A:
Demographic Data

Table 2: Demographic Data for Cities With EJ Indicators (percentage)

2010 Data	Persons Below Poverty Level	Black persons	American Indian and Alaska Native	Persons of Hispanic or Latino Origin	White persons	Persons under 5 years of age	Persons over 65 years of age	Un-employ ment rate (March 2014)
Bakersfield	19.3	8.2	1.5	45.5	37.8	9.0	8.4	9.2

Sources: Unemployment information from the State of California, Employee Development Department (EDD) Labor Market Information Division: http://www.labormarketinfo.edd.ca.gov/Content.asp?pageid=1006 and Demographics information from the U.S. Department of Commerce, U.S. Census Bureau: http://quickfacts.census.gov/qfd/states/06/0603526.html.